

Assessing the State Standards through Curriculum and Instruction for Students with Significant Cognitive Disabilities

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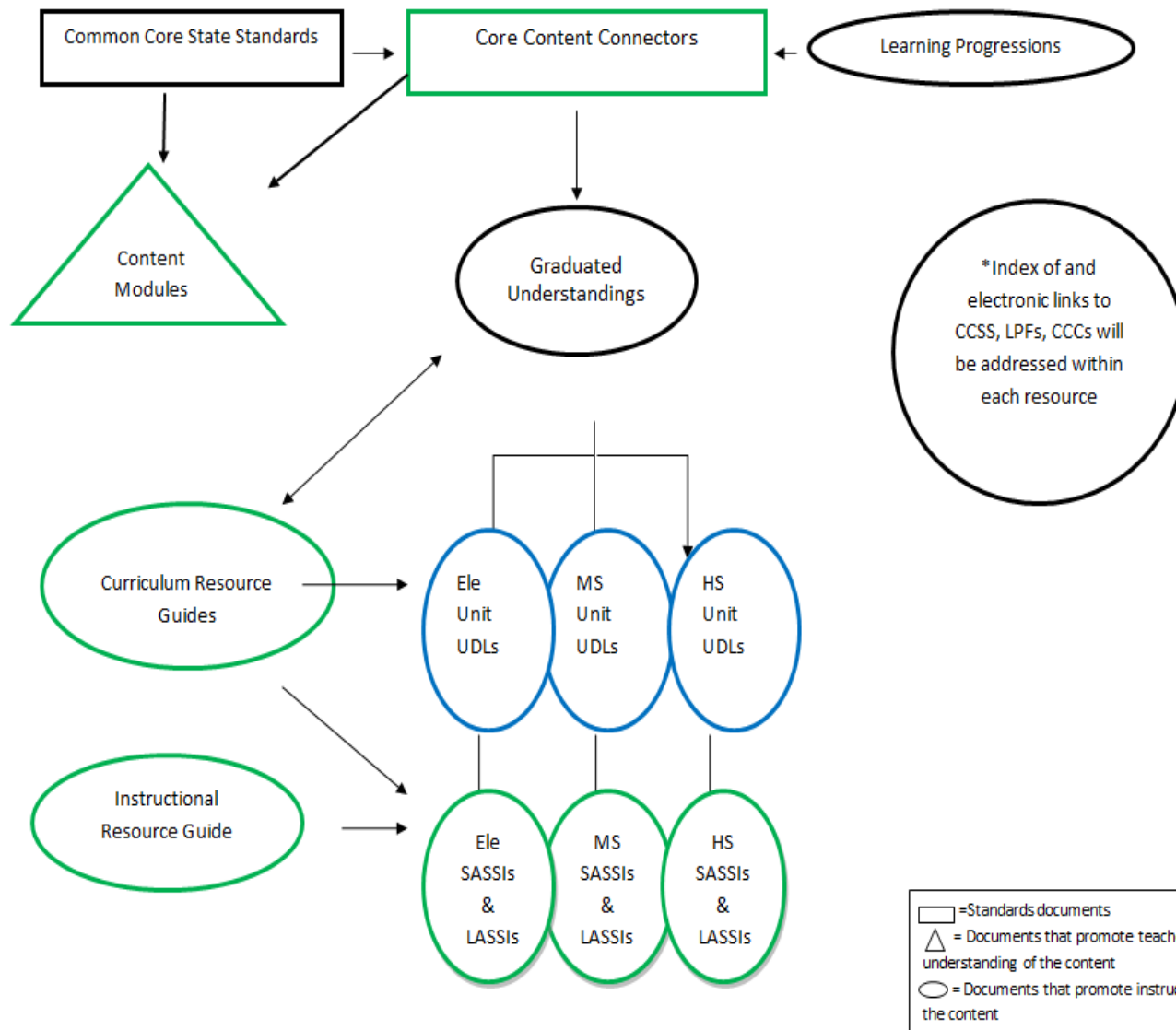
NCSC Project Goal

To develop a system of assessments supported by curriculum, instruction and professional development to ensure that students with the most significant cognitive disabilities achieve increasingly higher academic outcomes and leave high school ready for post-secondary options.

Curriculum and Instruction Schema

SCHEMA for Common Core State Standards Resources

NCSC Instructional Resources



Core Content Connectors (CCCs)

- Identify the most salient grade-level, core academic content in ELA and mathematics found in both the CCSS and the LPF;
- Illustrate the necessary knowledge and skills in order to reach the learning targets within the LPF and the CCSS;
- Focus on the core content, knowledge and skills needed at each grade to promote success at the next; and
- Identify priorities in each content area to guide the instruction for students in this population and for the alternate assessment.

Graduated Understandings

- Assist educators to target instruction by promoting understanding of and student movement towards the Common Core State Standards by:
 - Reflecting the learning progressions within and across grades;
 - Articulating the big ideas, learning targets, and related instructional content; and
 - Suggesting instructional strategies and scaffolds and supports.
- Provide educators with easily interpreted visual representations of the areas of curricular emphasis within and across grades.

Graduated Understandings

- Utilized by teachers to:
 - Share a common language;
 - Plan multi-grade instruction for students who participate in the AA-AAS with a wide range of abilities and challenges;
 - Support developed instructional units that will include all students and will promote the use of Universal Design of Learning; and
 - Engage in collaborative discussion and delivery of instruction.
- Include Instructional Families and Element Cards.

GUs: Instructional Families

- Articulate the big ideas and related instructional content;
- Provide a structure/schema for teachers that articulates emphasized content within and across grades;
- Reference the related CCSS for each CCC; and
- Organized by domain:
 - By grade, learning targets, and instructional families
 - By grade, instructional family, and CCCs
 - By instructional family and CCCs by grades.

Distribution of Instructional Families and Learning Targets: Measurement

| (K-4) Elementary School Learning Targets | | | | | (5-8) Middle School Learning Targets | | | | (9-12) High School Learning Targets |
|--|--|--|--|--|---|--|--|--|---|
| E.ME-1 Explore relationships among units, attributes, and measures within a system of measurement: <ul style="list-style-type: none"> Identify measurement attributes and units; Use measurement attributes to describe and compare objects situations, or events. | | | | | M.ME-1 Extend understanding of attributes and units: <ul style="list-style-type: none"> Make conversions within measurement systems; Relate measurement attributes, measures, models, and formulas. | | | | H.ME-1 Explore measurable attributes, measurement systems and processes of measurement of more complex or abstract quantities. |
| E.ME-2 Apply appropriate techniques (iteration and tiling), tools (standard and non-standard), and formulas (area and perimeter) to determine or estimate measurements. | | | | | M.ME-2 Apply appropriate techniques, strategies, and formulas to solve problems involving measurements (including derived measurements and rates). | | | | H.ME-2 Apply and appropriate level of quantify or interpret abstract events, objects, and situations. |

Grade-span Learning Targets from the Learning Progression Frameworks

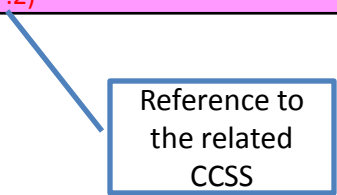
Distribution of Instructional Families and the number of related CCCs by grade.

Five Instructional Families in the domain of Measurement

| | |
|---|-------------------------------------|
| Sorting and Classifying | Perimeter, Area and Volume Problems |
| Measuring Using Tools | Scaling and Unit Conversions |
| Problem Solving Using Measurement Process | |

Overview of CCCs: Data Analysis II:

Develop and Use Probability Models; Draw Inferences about a Distribution

| Grade 7 | Grade 8 | HS |
|---|---|---|
| 7.DPS.2a Conduct simple probability experiments (No CCSS) | 8.DPS.2e4 Determine the theoretical probability of multistage probability experiments (2 coins, 2 dice) (7.SP.8) | H.DSP.2b1 Identify and describe the degree to which something is rated “good” or “bad”/desirable or undesirable based on numerical information (S.MD.7) |
| 7.DPS.2d1 Describe the probability of events as being certain or impossible, likely, less likely or equally likely (7.SP.5) | 8.DPS.2e5 Collect data from multistage probability experiments(2 coins, 2 dice) (7.SP.8) | H.DPS.2c1 Determine the theoretical probability of multistage probability experiments (S.MD.3) |
| 7.DPS.2d2 State the theoretical probability of events occurring in terms of ratios(words, percentages, decimals) (7.SP.5) | 8.DPS.2e6 Compare actual results of multistage experiment with theoretical probabilities (7.SP.8) | H.DPS.2c2 Collect data from multistage probability experiments (S.MD.3) |
| 7.DPS.2b1 Identify sample space for a single event (coin, spinner, die) (No CCSS) | 8.DPS.2g1 Distinguish between a linear and non-linear association when analyzing bivariate data on a scatter plot (8.SP.2) | H.DPS.1c3 Determine what inferences can be made from statistics (S.IC.1) |
| 7.DPS.2d3 Using a tree diagram, represent all possible outcomes of a situation, with up to 3 compound events with 2 or 3 possibilities per category (selecting the color of shirt, pant, type of shoes) (No CCSS) |  <div>Reference to the related CCSS</div> | H.DPS.2c3 Compare actual results of multistage experiment with theoretical probabilities (S.MD.3) |
| 7.DPS.2d4 Make a prediction regarding the probability of an event occurring; conduct simple probability experiments (7.SP.6) | | H.DSP.2d1 Select or make an appropriate statement based on a two-way frequency table (S.CP.4) |
| 7.DPS.2e1 Determine the theoretical probability of multistage probability experiments (2 coins, 2 dice) (7.SP.8) | | H.DSP.2e1 Select or make an appropriate statement based on real world examples of conditional probability (S.CP.5) |
| 7.DPS.2e2 Collect data from multistage probability experiments(2 coins, 2 dice) (7.SP.8) | | |
| 7.DPS.2d5 Compare actual results of simple experiment with theoretical probabilities (7.SP.7) | | |
| 7.DPS.2e3 Compare actual results of multistage experiment with theoretical probabilities (7.SP.8) | | |

Instructional Family CCCs: Measurement

| CCSS Domain Name: Measurement | | | | |
|---|---|---|---|---|
| Sorting and Classifying | Measuring Using Tools | Problem Solving Using Measurement Process | Perimeter, Area and Volume Problems | Scaling and Unit Conversions |
| K.ME.1a1 Describe objects in terms of measurable attributes (longer, shorter, heavier, lighter...) (K.MD.1) | 1.ME.1b2 Compare the lengths of two objects indirectly by using a third object (1.MD.1) | 2.ME.2a4 Solve one step subtraction problems involving the difference of the lengths of 2 objects in standard length units (2.MD.4) | 3.ME.2b Use addition to find the perimeter of a rectangle (3.MD.8) | 1.ME.2a1 Measure using copies of one object to measure another (1.MD.2) |
| K.ME.1b1 Sort objects by characteristics (e.g., big/little, colors, shapes, etc.) (K.MD.3) | 1.ME.1c1 Compare 2 units of measurement and identify which unit would require more or less when measuring a selected object. (1.MD.2) | 2.ME.1a2 Solve word problems using dollar bills, quarters, dimes, nickels, or pennies (2.MD.8) | 3.ME.2e1 Estimate liquid volume (3.MD.2) | 1.ME.2b1 Express length of an object as a whole number of lengths unit by laying multiple copies of a shorter object end to end (1.MD.2) |
| K.ME.1b2 Compare 2 objects with a measurable attribute in common to see which object has more/less of the attribute (length, height, weight) (K.MD.3) | 1.ME.2a2 Use time to sequence up to 3 events, using a digital or analog clock (1.MD.3) | 2.ME.1f2 Find the difference between two times using the same unit (1.MD.4) | 4.ME.2h1 Apply the formulas for area and perimeter to solve real world problems (3.MD.7a; 3.MD.8) | 4.ME.2f1 Complete a conversion table for length and mass within a single system (4.MD.1) |
| 1.ME.1a1 Identify minutes and hours on a digital clock (1.MD.3) | 2.ME.1a3 Tell time to the nearest ½ hour using digital clocks (1.MD.3) | 3.ME.1f1 Find the difference between two times using number lines (3.MD.1) | 5.ME.2b1 Use filling and multiplication to determine volume (5.MD.5a) | 4.ME.1g1 Solve word problems using perimeter and area where changes occur to the dimensions of a rectilinear figure (4.MD.2; 4.MD.3) |
| 1.ME.1b1 Order up to 3 objects based on a measurable attribute (height, weight, length) (1.MD.1) | 2.ME.1c1 Measure the attributes (length, width, height) of an object using 2 different size units (2.MD.2) | 3.ME.1f2 Find the difference between two times using the addition and subtraction of whole hours or within an hour (whole hours: 5:00 to 8:00, within hours: 7:15 to 7:45) (3.MD.1) | 5.ME.2b2 Apply formula to solve one step problems involving volume (5.MD.5b) | 5.ME.2a1 Solve problems involving conversions of standard measurement units when finding area, volume, time lapse, or mass (5.MD.1) |
| 2.ME.1a1 Select appropriate unit of measurement to measure an object (ruler or yard stick; inches or feet) (2.MD.1) | 2.ME.1c2 Recognize that units can be decomposed into smaller units (2.MD.2) | 3.ME.1f2 Add to solve 1 step word problems (3.MD.2) | 6.ME.2a3 Apply the formula to find the area of triangles (6.G.1) | 5.ME.1b1 Convert standard measurements of time (5.MD.1) |
| 3.ME.2e1 Select appropriate tool for measurement: liquid volume, area, time, money (3.MD.2) | 2.ME.2b2 Select appropriate tools and demonstrate or identify appropriate measuring techniques (2.MD.1) | 3.ME.1g1 Identify a figure as getting larger or smaller when the dimensions of the figure changes (No CCSS) | 6.ME.2b2 Decompose complex shapes (polygon, trapezoid, pentagon) into simple shapes (rectangles, squares, triangles) to measure area (6.G.1) | 5.ME.1b2 Convert standard measurements of length (5.MD.1) |
| 4.ME.2e4 Select appropriate tool for measurement: mass, length, angles (4.MD.6) | 2.ME.2a3 Estimate the length of an object using units of feet and inches (2.MD.3) | 4.ME.2g Determine whether a situation calls for a precise measurement or an estimation (distance, volume, mass, time, money) (3.MD.2) | 6.ME.2b3 Decompose complex 3-D shapes into simple 3-D shapes to measure volume (5.MD.5a) | 5.ME.1b3 Convert measurements of mass (5.MD.1) |
| Reference to the related CCSS | 2.ME.2c1 Determine whether a situation calls for a precise measurement or an estimation (No CCSS) | 5.ME.1a1 Identify the appropriate units of measurement for different purposes in a real life context (e.g., measure a wall using feet, not inches) (4.MD.1) | 6.ME.1c1 Find the area of a 2-dimensional figure and the volume of a 3-dimensional figure (6.G.1; 6.G.2) | 6.ME.2a2 Solve one step real world measurement problems involving unit rates with ratios of whole numbers when given the unit rate (3 inches of snow falls per hour, how much in 6 hours) (6.RP.3b) |
| | 3.ME.1a1 Tell time to the nearest 5 minutes using a digital clock (2.MD.7) | 8.ME.2f Apply the Pythagorean theorem to determine lengths/distances in real-world situations (8.G.7) | 6.ME.1a1 Identify the appropriate formula (i.e., perimeter, area, volume) to use when measuring for different purposes in a real life context (6.G.2) | 6.ME.1b1 Complete a conversion table for length, mass, time, volume (6.RP.3d) |
| | 3.ME.1d1 Use tiling and addition to determine area | H.ME.1a1 Determine the necessary unit(s) to use to solve real world problems (N.Q.1) | 7.ME.2d 1 Apply formula to measure area and circumference of circles (7.G.4) | 6.ME.1b2 Analyze table to answer questions (6.RP.3d) |
| | 3.ME.1d2 Measure area of rectilinear figures by counting squares (3.MD.7a) | H.ME.1a2 Solve real world problems involving units of measurement (N.Q.1) | 7.ME.2c Solve one step real world measurement problems involving area, volume, or surface area of two- and three-dimensional objects (6.G.1; 6.G.2) | 7.ME.1d1 Solve problems that use proportional reasoning with ratios of length and area (7.G.1) |
| | 3.ME.1f1 Select appropriate units for measurement (liquid volume, area, time, money) (3.MD.2) | H.ME.2a Describe the accuracy of measurement when reporting quantity (you can lessen your limitations by measuring precisely) (N.Q.3) | 8.ME.2d2 Apply the formula to find the volume of 3 dimensional shapes (i.e., cubes, spheres, and cylinders) (8.G.9) | 7.ME.2e1 Solve one step real world problems related to scaling (7.G.1) |
| | 3.ME.2e2 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch (3.MD.4) | | 8.ME.1e2 Compare area and volume of similar figures (8.G.4) | 7.ME.2e2 Solve one step problems involving unit rates associated with ratios of fractions (7.RP.1) |
| | 4.ME.2e5 Construct a given angle (4.MD.6) | | H.ME.1b1 Describe the relationship between the attributes of a figure and the changes in the area or volume when 1 attribute is changed (G.MG.1) | 8.ME.1e1 Describe the changes in surface area, area, and volume when the figure is changed in some way (e.g., scale drawings) (8.G.4) |
| | 4.ME.2e6 Measure right angles using a tool (e.g., angle ruler, protractor) (4.MD.6) | | H.ME.1b2 Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute (A.REI.3) | H.ME.2b5 Apply the formula of geometric figures to solve design problems (e.g., designing an object or structure to satisfy physical restraints or minimize cost) (G.MG.3) |
| | 4.ME.1d1 Use tiling and multiplication to determine area (3.MD.7a) | | H.ME.2b4 Apply the formula to the area of a composite figure (e.g., a circle of radius r) (G.G.5) | H.ME.2b1 Determine the dimensions of a figure (e.g., a rectangle) (G.G.5) |
| | 4.ME.1f1 Select appropriate units for measurement: mass, length, angles (No CCSS) | | | |
| | 4.ME.1f2 Select appropriate units for the value of a set of coins or dollars (No CCSS) | | | |
| | | | | |

Five Instructional Families in Measurement

Element Cards

- Assist educators to target instruction in multiple settings by promoting teacher understanding of and student movement towards the Common Core State Standards
- Contain one (or more) CCCs from a specific Instructional Family;
- Include the related Progress Indicator from the LPF;
- Provide essential understandings that include challenging and attainable content that is measureable and observable for use in instruction and in assessment;
- Provide suggested instructional strategies to teach the specific concepts and skills of the CCC; and
- Provide suggested supports and scaffolds for students to be able to demonstrate what they know and can do.

Curriculum Resource Guide

- Provides guidance for teaching the CCSS to students with the most significant cognitive disabilities;
- Provides examples for differentiating instruction for a wide range of students in multiple grade levels; and
- Delineates the necessary skills and knowledge students need to acquire/mastery the content.

Instructional Resource Guide

- Provides guidance for teachers regarding evidence-based prompting and instructional strategies;
- Defines methods of prompting and feedback based on the principles and research of Applied Behavioral Analysis (ABA); and
- Describes systematic instruction strategies that result in measurable student responses.

Questions ???

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